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THE GENUS *PLACOSTYLUS* IN NEW CALEDONIA

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The large snails of the genus *Placostylus* abound all round the coast of New Caledonia. The more typical forms do not go inland, or to any elevation in the mountains, but the peculiar *P. bavayi* (Crosse and Marie) was found on the summit of Mt. Mou, which has an elevation of 1219 meters. People in New Caledonia eat *Placostylus*, and good specimens in considerable numbers may often be obtained in back gardens where the cooks have thrown them out after extracting the soft parts.

The number of species and varieties described is very great, but the genus is still in some confusion. As one follows the coast, local races and species appear, and sometimes the contrast is very great. We went up the west coast to Mueo, which is at the end of the automobile road. At Mueo a very characteristic form, short, broad and thick, with contracted aperture, was common. The epidermis varies from rich reddish brown to rather pale olive brown, without spiral bands. The heavy lip is always white, and the aperture within may be red or white. This is *P. poyensis* Kobelt (pl. 2, fig. 3), the type locality of which is not far away. Most of the shells have the aperture more as in var. *goyettensis* Crosse, but this is only an individual variation.

Going south from Mueo, the next convenient stopping place is Bourail. Here the *Placostylus* are entirely differ-

ent; of the type of *P. fibratus*. The thick shell is much more elongate than *P. poyensis*, the aperture wider, especially below; the parietal tooth rudimentary or absent. The columellar thickening never very large, sometimes hardly evident, gradually sloping to the lower end; the thick lip always white, but the aperture red within, the surface of the shell rich red brown or rather more olivaceous, without bands, but with distinct spiral malleation. This I call *P. fibratus bourailensis* subsp. n. (pl. 2, figs. 4, 5, 6). There is some resemblance to *P. neckliaensis* Kobelt, but that is a west coast form, with much narrower aperture and larger parietal lamella. *P. kanalensis* (Crosse) has been recorded from Bourail, but I think in error. It comes from Canala, on the west coast nearly opposite Bourail, but separated from it by high mountains. Compared with *bourailensis*, *P. kanalensis* has the spire broader below, more conical, much less cylindrical. The peristome is also often colored.

A characteristic *P. f. bourailensis* is 90 mm. long, spire 41 mm., aperture 37 mm., maximum width of shell about 41 mm. On the sea coast near Bourail the shells are larger, about 108 mm. long, spire 49 mm., length of aperture 46 mm. I do not include this in *bourailensis* but consider it a variation of *P. fibratus* (Martyn).

At Noumea, still on the west coast, but far to the south, we found no living *Placostylus*, but in a superficial deposit on the top of a grassy hill we obtained a series of subfossil shells, including a large thick *Placostylus*, distinctly flattened dorsoventrally, with very wide aperture, and no parietal tooth or columellar callus. The shell is only 92 mm. long, spire 37 mm., aperture 45, but I refer it to *P. souvillei* (Morelet), a characteristic species of southern New Caledonia. As I have only one complete shell, I cannot say whether a distinct (extinct) race existed. The locality is on the opposite side of the town from Artillery Point where subfossil *P. corpulentus* (Gassies) is reported to have been found by Layard. *P. savesi* Crosse, also subfossil at Artillery Point, is only 56 mm. long.

Crossing the bay from Noumea, in the "petroletto", we reach Ile Nou, long famous as a convict settlement, from which no less than 22 species of snails have been recorded. Several species of *Placostylus* are reported to live in this small area, but those we found, all dead and probably sub-fossil, certainly belong to a single variable species. It is small, 57 to 68 mm. long, solid, broad-fusiform, parietal tooth usually well developed but conical, sometimes practically absent, columellar callus distinct. This is the endemic *P. duplex* (Gassies), but it seems better to call it *P. porphyrostomus duplex*. A short distance east of Noumea, at the foot of Mt. Dore, is Plum Farm, a very attractive resort conducted by M. and Mdme. P. Bloc. The name Plum (or Ploum) is from a native language, and has nothing to do with our word plum. *Placostylus* are scarce here, and I failed to find them; but Miss Bloc, the daughter of our host, knew their habitats and brought in four specimens. The species is *P. questieri* (Gassies), I think the most beautiful of all the forms. It is fusiform, comparatively thin, olive brown, with more or less indistinct spiral dark lines; the aperture and lip in good specimens are a rich red, rather redder than apricot color. The parietal tooth is rudimentary, and the columellar callus is long and weak. In the living animals, the foot is very wide, pale coffee brown; region of head dark brown; sole and mantle pale yellowish or greyish. Plum Farm is on the coast, in a region of serpentine rocks, with red soil. There is little or no lime, except along the coast, where there has been sufficient elevation to expose portions of old reefs with decaying marine shells of living species. This *P. questieri* is quite distinct from *P. fibratus*, and shows I think a distinct tendency toward the *P. bavayi* alliance. Still further west along this coast is Ngo Bay, where I found an extremely variable lot of *Placostylus*, of large size. All were dead, but one shows the small dark brown epidermis, quite without banding. I thought at first that I had more than one species, but all must be referred to *P. fibratus* (Martyn). One of them is very similar to fig. 16, pl. 25, of the Manual

of Conchology, which I believe is not true *guestieri*. Three islands off the southern coast were examined for *Placostylus*, and all produced slightly divergent races of *P. porphyrostomus* (Pfeiffer). These shells, as Pilsbry notes, lose the epidermis when adult; specimens from Bailly Island and Dge, which I considered dead, unexpectedly came to life and crawled about. A Bailly Island one is still living. The animal is gray, a different shade of color from *P. guestieri*. At Dge, on the southwest corner of Ile Ouen (or Uen), *P. porphyrostomus* was decidedly uncommon, and I brought away only three specimens. On the small Charron Island it was common and variable. From Charron Island, my wife and I rowed across to Bailly Island, but were met by such swarms of mosquitoes that we had to retreat. Leaving my wife in the boat, I hastily ran about under the trees, and picked up six specimens. On comparing the lots from these different places, they appear all to belong to one species, though the diversity in the Charron Island lot is certainly remarkable. The Bailly Island ones have the spire distinctly more pointed or acute than the others, and constitute a weak race, not requiring a special name. (Pl. 2, fig. 2.)

The existence of *P. porphyrostomus* on the small islands, and the larger *P. fibratus*, *souvillei* and *guestieri* on the mainland, is noteworthy. This may throw doubt on Ile Amère as the type locality for *P. fibratus*. Could it have come from the Isle of Pines, which is a large island known to possess various *P. fibratus* varieties? Was it not on the Isle of Pines that Cook's party found the remarkable tree called *Araucaria cookii* R. Br.? It has been related that the naturalists (Banks and Solander) thought that they were columns of basalt from a distance, but the keen eyes of the sailors detected trees.¹

One difficulty in the way of correctly interpreting species of *Placostylus* arises from the fact that in certain species,

¹ Schinz and Guillaumin treat *A. cookii* as a synonym of *A. columnaris* (Forster), but Forster's tree seems to have been described from New South Wales.

after the shell has reached full size, the lip thickens enormously and becomes as it were double, while the parietal and columellar lamellae grow and thicken. Hence a sub-adult shell looks very different from an old individual. This certainly accounts for a good deal of the difference seen in the Charron Island *P. porphyrostomus*. Aside from this, the individual variation is so great that it is easy to pick out specimens which seem to represent valid species in the cabinet. This has been done in a number of instances, and is in part the explanation of the apparent concentration of species in certain localities. It may also be possible to set up so-called species, from analogous variations of several different races. The true condition of affairs will not be known until someone travels all round the coast (as may be done in a launch, mostly with the protection of the reef) and collects the snails in large series at all points. The number of distinct races is undoubtedly large, and so far as I could observe, only one exists at any one place. The reputed occurrence of the same race at remote points may be due to errors of identification, or perhaps to the snails having been carried about by the natives. Critical studies on the ground are especially to be desired on the Isle of Pines (from which many forms have been reported) and the Loyalty Islands *P. guestieri* is said to occur at Mt. Dore (or Mont-Dor) and in the Loyalty Islands. I will designate Mt. Dore as the type locality, as it seems to have been left uncertain. The variety *gatopensis* Crosse, found no great distance from Mt. Dore, probably has no standing. What actually occurs at Ouvea (Loyalty Islands) remains to be seen.

The nearest relatives of the New Caledonia—Loyalty Islands *Placostylus* are no doubt in Lord Howe Island, which is a remnant of a much larger land area. I am indebted to Mr. Iredale for a specimen of *P. bivariocosus* (Gaskoin) from Lord Howe Island.

In studying *Placostylus* I was very fortunate in having access to the splendid collection in the Australian Museum, Sydney.

EXPLANATION OF PLATE 2

- Fig. 1. *Odostomia (Ividella) mariae* Bartsch. Page 41.
 Fig. 2. *Placostylus porphyrostoma* (Pfr.), var. from
 Bailly Island. 146881 ANSP.
 Fig. 3. *Placostylus poyensis* Kob. 146888.
 Figs. 4, 6. *Placostylus fibratus bourailensis* n. subsp.,
 paratypes. 146884.
 Fig. 5. *Placostylus fibratus bourailensis* n. subsp.,
 type. 146883.

NEW CUBAN SPECIES OF CARACOLUS

BY H. A. PILSBRY

PLEURODONTE (CARACOLUS) LOWEI, new species. Plate 4,
 figs. 4, 5, 6.

Cuesta de Paulo, between Sabana and Cape Maisi,
 Oriente, Cuba. Type No. 147372 ANSP., collected by Her-
 bert N. Lowe, September, 1928.

The shell is dome-shaped, the height about three-fourths
 of the diameter, with the periphery rounded; imperforate;
 solid; cinnamon-brown, with a narrow chestnut brown
 band a short distance above the suture, and immediately
 below the periphery of the last whorl; the base dull chamois
 with curved brown radial streaks and a narrow brown
 band a short distance below the subperipheral band. The
 surface is semi-matt, with a sculpture of fine ripples of
 growth. The whorls are very slightly convex, slowly in-
 creasing, the suture not impressed until the last whorl,
 which is more convex, the base weakly convex, impressed
 in the center; anteriorly it descends slowly, with no gib-
 bosity behind the upper lip. The aperture approaches a
 horizontal position. The thick, white peristome is nar-
 rowly reflected. Parietal callus moderately heavy.

Height 24 mm., diam. 32.2 mm.; $6\frac{1}{2}$ whorls.

This fine species appears entirely distinct from other
 described forms; in fact, if all other Cuban Caracoli are
 ranked as forms of *P. sagemon*, this should still be con-